

## **Section II. REMARKS**

The pending claims in the application are 1-4, 6, 7, 10, 12-22, 24-26, 31-36, and 38-43.

### **Submission of Supplemental Information Disclosure**

In compliance with the ongoing duty of disclosure imposed by 37 C.F.R. §1.56, applicants submit herewith a Supplemental Information Disclosure Statement.

### **Correction of Office Action Summary Form**

In the Office Action Summary form (PTOL-326) provided with the March 23, 2005 Office Action, the Examiner indicated that the Office Action was responsive to communication(s) filed on 29 December 2004, which is incorrect.

The last communication between applicants and the Office occurred on April 8, 2004, when applicants requested a rescission of the April 5, 2004 Notice of Non-Compliant Amendment on the basis that the response to the December 29, 2003 Office Action was in compliance with 37 CFR §1.121.

Applicants request the Examiner acknowledge same.

### **Renumbering of Claims 32-39 as Claims 30-37**

Pursuant to 37 CFR §1.126 and consistent with the Examiner's request, applicants have renumbered claims 32-39 as claims 30-37 so as to keep the consecutive numbering intact.

### **Allowable Subject Matter**

In the March 23, 2005 Office Action, the Examiner indicated that claims 31-34 (previously claims 33-36 before renumbering herein) were allowed. Applicants acknowledge same. It is noted that applicants amended claims 31, 32 and 34 herein and remain in condition for allowance. Applicants request the Examiner acknowledge same.

In addition, the Examiner indicated that dependent claims 6, 10, 12, 24, and 25 would be allowable if rewritten to depend from the appropriate one of allowable claims 31-34.

In response, applicants have amended claims 6, 10, 12, 24, and 25 herein, consistent with the Examiner's suggestion, thereby obviating the objection. Accordingly, claims 6, 10, 12, 24 and 25 are now in condition for allowance. Applicants request the Examiner acknowledge same.

#### **Amendment of Claims 1, 16, and 31-36**

Claim 1 has been amended herein to recite:

**“A method of forming an iridium-containing film on a substrate, comprising use of an organic solvent solution, said organic solvent solution comprising an iridium-containing precursor that is decomposable to deposit iridium on the substrate, said method comprising decomposing the precursor from said solution and depositing iridium on the substrate in an oxidizing ambient environment, wherein the decomposition of the precursor and deposition of iridium on the substrate is carried out by a process selected from the group consisting of chemical vapor deposition (CVD), assisted-CVD, ion plating, rapid thermal processing, and molecular beam epitaxy.”** (emphasis showing amendment(s) made herein)

Claims 16, 31, and 34-36 have been correspondingly amended.

Support for this amendment can be found in the instant specification at page 14, lines 9-15 and page 17, lines 1-14.

Claim 32 has been amended herein to remove methyl from the list of possible R and R' substituents.

Claim 33 has been amended herein in response to the Examiner's request that claims 32-39 be renumbered as 30-37.

#### **Rejection of Claims and Traversal Thereof**

In the March 23, 2005 Office Action:

claims 3, 5, 9, 11, 21, and 23 were rejected under 35 U.S.C. §112, second paragraph;

claims 1, 2, 4, 13, 16-20, 22, 26 and 37-39 were rejected under 35 U.S.C. §102(e) as being anticipated by Nakabayashi et al. (U.S. Patent No. 6,271,077); and

claims 3, 7, 14, 15 and 21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nakabayashi et al.

This rejection is hereby traversed in application to pending claims 1-4, 6, 7, 10, 12-22, 24-26, 31-36, and 38-43, as amended herein. The various grounds of rejection are addressed in turn below.

**Rejection under 35 U.S.C. §112, second paragraph**

In the March 23, 2005 Office Action, claims 3, 5, 9, 11, 21, and 23 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention, on the following grounds.

1. Claims 5, 9, 11 and 23 were rejected under §112, second paragraph, as indefinite on the basis that they were duplicates of newly added claims 31-34 (previously claims 33-36 before renumbering herein). Applicants have cancelled the offending claims herein, thereby obviating this rejection.
2. Claims 3 and 21 were rejected under §112, second paragraph, as indefinite on the basis that the Examiner questions how the iridium formed is elemental when the film is deposited in an oxygen atmosphere.

Firstly, it is noted that claims 3 and 21 recite that “the iridium deposited on the substrate comprises elemental iridium.” It is well established that the transition phrase “comprising” is inclusive or open-ended and does not exclude additional, unrecited elements. See, MPEP §2111.03 (citing *Genentech, Inc. v. Chiron Corp.*, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997)).

Secondly, it is well known in the art that iridium does not form an oxide below 550°C<sup>1</sup> and thus, elemental iridium can be deposited in an oxygen atmosphere under the correct conditions. Rather than forming an iridium oxide compound, the oxygen oxidizes the carbon-containing ligands thereby minimizing the amount of carbon contaminating the deposited iridium layer.

Accordingly, claims 3 and 21 satisfy the definiteness standard of clarity and precision. Withdrawal of the rejection of same is respectfully requested.

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<sup>1</sup> W.P. Griffith, C.J. Raub and E. Raub, *Gmelin Handbook of Inorganic Chemistry; Iridium – Band 2*, ed. K. Swars, Springer-Verlag, New York, 1978, pp. 2-4.

### **Rejections under 35 U.S.C. §§102, 103**

In the March 23, 2005 Office Action, claims 1, 2, 4, 13, 16-20, 22, 26 and 35-37 (previously 37-39) were rejected under 35 U.S.C. §102(e) as being anticipated by Nakabayashi et al. (U.S. Patent No. 6,271,077) (hereinafter Nakabayashi) and claims 3, 7, 14, 15 and 21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nakabayashi. Applicants traverse such rejection.

Nakabayashi relates to the chemical vapor deposition of iridium and iridium oxide capacitor electrodes. Specifically, Ir(DPM)<sub>3</sub> precursor was used to form IrO<sub>2</sub> by CVD in an oxidizing atmosphere. Nakabayashi also discusses the conventional use of Ir(acac)<sub>3</sub> as a precursor material.

As introduced hereinabove, applicants' claim 1 recites:

**“A method of forming an iridium-containing film on a substrate, comprising use of an organic solvent solution, said organic solvent solution comprising an iridium-containing precursor that is decomposable to deposit iridium on the substrate, said method comprising decomposing the precursor from said solution and depositing iridium on the substrate in an oxidizing ambient environment, wherein the decomposition of the precursor and deposition of iridium on the substrate is carried out by a process selected from the group consisting of chemical vapor deposition (CVD), assisted-CVD, ion plating, rapid thermal processing, and molecular beam epitaxy.”** (emphasis showing amendment(s) made herein)

Comparing Nakabayashi with applicants' claim 1, it can be seen that Nakabayashi does not teach or suggest an organic solvent solution comprising an iridium-containing precursor. The iridium films produced in Nakabayashi are deposited using solid iridium precursors, including Ir(DPM)<sub>3</sub> and Ir(acac)<sub>3</sub>, not an organic solvent solution comprising iridium-containing precursors as claimed by applicants herein.

It is well established, as a matter of law, that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987).

Clearly, Nakabayashi does not satisfy this standard and as such, Nakabayashi does not anticipate applicants' claims 1, 2, 4, 13, 16-20, 22, 26 and 35-37.

Regarding the rejection under 35 U.S.C. §103, it can be seen that Nakabayashi does not motivate, teach or suggest every limitation of applicants' claims. Accordingly, one of the requirements needed to establish a *prima facie* case of obviousness has not been met. See, *In re Royka*, 180 USPQ 580 (CCPA 1974).

Further, Nakabayashi does not motivate one of ordinary skill in the art to modify the disclosure thereof in any way that would yield applicants' claimed invention. The Examiner is respectfully reminded that in order to make a legally sufficient rejection based on a modification of the reference disclosure, the areas of the reference that suggest the modification must be explained with specificity. See, *Ex parte Humphreys*, 24 U.S.P.Q.2d 1255, 1262 (B.P.A.I. 1992). The Examiner may not reconstruct applicants' claimed invention in light of applicants' own disclosure, without any suggestive basis in the prior art reference itself.

Accordingly, Nakabayashi fails to anticipate or make obvious applicants' claimed invention. Withdrawal of the rejections under §§102, 103 in view of Nakabayashi is respectfully requested.

#### **Petition for Extension of Time/Fees Payable**

Applicants hereby petition for a one (1) month extension of time, extending the deadline for responding to the March 23, 2005 Office Action from June 23, 2005 to July 23, 2005. The fee of \$120.00 specified in 37 CFR §1.17(a)(1) for such one (1) month extension is hereby enclosed.

In addition, six (6) dependent claims have been added, and four (4) dependent claims and one (1) independent claim have been deleted herein. Thus, no added claims fee is due.<sup>2</sup>

The total fee of \$180.00 is authorized to be charged in the attached Credit Card Authorization Form. Authorization is also hereby given to charge any deficiency in applicable fees for this response to Deposit Account No. 08-3284 of Intellectual Property/Technology Law.

#### **CONCLUSION**

Based on the amendments made herein and the foregoing remarks, claims 1-4, 6, 7, 10, 12-22, 24-26, 31-36, and 38-43 are now in form and condition for allowance. The Examiner therefore is respectfully requested to reconsider and allow such amended claims.

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<sup>2</sup>  $((5 \times \$50.00) + (1 \times \$200.00)) - (6 \times \$50.00) < \$0$

Respectfully submitted,



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